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AUTHOR Grace, George W.

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INSTITUTION Hawaii Univ., Honolulu. Dept. of Linguistics.n

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ABSTRACT

This study analyzes the sound correspondences of six Oceanic languages using reconstructed forms from Proto-Oceanic as a frame of reference. Sobei, Wakde, Masimasi, Anus, Bojgo, and Tarpia provide the cognates used in the analysis. Consonants and vowels are analyzed, and sound correspondences are examined for regularity of development and possible statements of generality. Canonical forms are also dicussed and compared. A large number of individual segments cannot be fully explained because the list of available cognates is small. There seem to be many more conditioned changes than have been found in many Oceanic languages. More information is needed, and more serious field study is recommended. The list of cognates used is included along with a list of references. (VM)

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NOTES ON THE PHONOLOGICAL HISTORY OF THE AUSTRONESIAN LANGUAGES OF THE SARMI COAST*

George W. Grace

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I. Introduction

This study is intended as a small contribution to the large task of analyzing the sound correspondences of Oceanic languages. There are still very few Oceanic languages whose sound correspondences, either with other related languages or with reconstructed proto-forms, have been studied at all carefully. However, more such analyses seem essential if the reconstruction of Proto-Oceanic is ever to achieve the solid foundation and the scope of Dempwolff's reconstruction of Proto-Austronesian.

The languages treated in the present study are geographically among the westernmost languages of the Oceanic subgroup. They are spoken in what was, during the Dutch administration (I have not been able to find any information on current administrative divisions), the Sarmi Subdistrict of the Hollandia District of Netherlands New Guinea (now West Irian).

Six vocabularies were used for this study. They are designated here by the following names (ordered on the basis of geographical location from west to east): Sobei, Wakdé, Masimasi, Anus, Boŋgo, and Tarpia. More specifically, the respective locations are: (1) Sobei--the region of the settlement Sarmi on the north coast of New Guinea at

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approximately 138° 45' east longitude, (2) Wakdé--the island Wakdé, (3) Masimasi--the island Masimasi, (4) Anus--the island Anus along with a settlement on the facing coast, (5) Boŋgo--the region of the settlement Armopa on the coast at approximately 139° 36' east, and (6) Tarpia--the coast around the mouth of the Sermo Wai River (approximately 140° east). Austronesian languages are spoken on some other islands in the area, but it is likely that all are at least dialectally close to languages represented in the sample.

There is very little material in print on these languages. I have a vocabulary list labeled "Arimoa" which I copied some years ago from Meyer 1874. I have not been able to identify the language with certainty, but it appears to represent a member of this group. Unfortunately, my notes do not include whatever information Meyer gave about the location of the language, and I have not been able so far to obtain access to his work again. More recently, some information on languages of this group has appeared in Cowan 1949-50, 1952-53, and 1953, as well as in Galis 1955-56.

The data which were ultimately selected for use in the present study appear in the cognate list at the end. It has been my intention to include all forms that show enough likelihood of being cognate with the Proto-Oceanic reconstructions cited in conjunction with them as to require

consideration in an investigation of the sound correspondences. In the case of these languages, as is so often the case in Melanesia, the number of cognates is not at all large. This would be true even if all of the forms cited were valid cognates, and this, of course, is not being claimed.

The Reconstructions

I have attempted to use Proto-Oceanic, rather than Proto-Austronesian reconstructions. This procedure involves some difficulties as there is no body of Proto-Oceanic reconstructions comparable in scope to Dempwolff's (1938) Austronesisches Wörterverzeichnis. However, I find the difficulties and uncertainties involved in attempting to use Proto-Austronesian reconstructions even greater. I believe these difficulties will be apparent to anyone who carefully examines the Oceanic cognates proposed in Dempwolff 1938. Chrétien (1962) reported that there are 762 Proto-Austronesian reconstructions for which Oceanic cognates were proposed in that work. However, in the case of a very large number of these proposed cognates there are good grounds for questioning whether or not they are in fact cognate. Many show irregular phonological developments. Others require an analysis (often with no independent motivation) of the forms actually reported so as to permit certain phonemic sequences, abstracted from the whole, to be considered as representing the cognate portion. In other cases the semantic connection seems far-fetched.

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And numerous examples simultaneously involve more than one of these types of problem.

One factor that generally makes the identification of Proto-Austronesian retentions more difficult in Oceanic languages than in Indonesian is the greater loss of phonological information in the former. All of the modern Austronesian languages have lost some information--through phonological mergers and the like--as compared with Proto-Austronesian. As a consequence a given form in a modern Austronesian language could often be derived by quite regular rules from any of several theoretically possible Proto-Austronesian forms. Often, in fact, more than one of these theoretically possible Proto-Austronesian forms have actually been reconstructed. But this kind of ambiguity is much greater in Oceanic than in Indonesian languages. The number of Proto-Austronesian reconstructions that must be counted--on purely phonological grounds--as possible ancestors of a particular Oceanic form is, on the average, significantly greater than in the case of Indonesian forms.

I should make it clear that I have no doubt at all that the Oceanic languages belong to the Austronesian family and that many of the Oceanic cognates proposed by Dempwolff are unquestionably valid. The difficulty is that the relationship between Dempwolff's Proto-Austronesian and modern Oceanic languages is a quite remote one, and, as a result the number of cognates that can be identified with any degree of confidence

is often disappointingly small. I have, therefore, gradually become convinced that the strategy that is most likely to lead to some progress in working out the later history of the Oceanic languages will involve the comparison of the modern languages with a reconstructed Proto-Oceanic rather than directly with Proto-Austronesian.

With this objective in view I prepared a finder-list of Proto-Oceanic forms, or what I took to be reasonable candidates for that status (Grace 1969). I attempted to include in the list all suitable reconstructions that had been made and published elsewhere. Actually, only Milke has made formal reconstructions that were labeled as Proto-Oceanic. However, I included the forms reconstructed as Proto-Eastern Oceanic by Biggs (1965). I also included a number of additional Oceanic cognate sets which were not reflected in previous reconstructions, assigning to each the appropriate Proto-Oceanic shape.

The fact that some of these reconstructions are designated as Proto-Oceanic while others are explicitly intended just as Proto-Eastern Oceanic is no problem. The phonology of Proto-Eastern Oceanic as conceived of by Biggs and that of Proto-Oceanic in my conception (Milke's conception differed only in unessential details) are identical. According to the sound correspondences as they are now understood a Proto-Oceanic form that had been retained in the proposed Proto-Eastern Oceanic would show no change in shape whatever in the interval.

Therefore, there is no obstacle whatever to comparing languages which would be presumed to be Oceanic, but not Eastern Oceanic, with a set of mixed (Proto-Oceanic and Proto-Eastern Oceanic) reconstructions. If we find that the language has a form cognate with a reconstructed form labeled Proto-Eastern Oceanic, it simply means that the label of the reconstruction--but nothing else--is to be changed. The new label should reflect the fact that the form has been traced back at least as far as the last proto-language (e.g. Proto-Oceanic) common to the Eastern Oceanic languages involved and to the language being studied. In short, for present purposes these differences in labels can be disregarded.

Most of the reconstructions used in this study were taken immediately from the finder-list (Grace 1969). However, I have modified the orthography in always enclosing in parentheses, first, all nasal consonant symbols that immediately precede another consonant (I find there is a tendency to take these indications too seriously), and second, all final consonants. These final consonants are generally based on the Proto-Austronesian evidence, and do not necessarily indicate that the consonant has been observed in Oceanic languages.

However, the finder-list, although I find it convenient, is not generally accessible, and does not in any case give the evidence on which the reconstructions were based. Moreover, in the course of the present study I have added a few reconstructions that are not represented on the

finder-list. Therefore, I will briefly indicate where the evidence for the reconstructions appearing in the list at the end has been published, and when there is no previous publication, give some indications of the supporting evidence here.

I will take the reconstructions in numerical order, using the numbers appearing in the list. The abbreviations are as follows: B = evidence in Biggs 1965, C = evidence in Cashmore 1969 (occasionally accompanied by her spelling of the form), MA refers to Milke 1968, and MB to Milke 1961. The PAN citations are from Dempwolff 1938 in Dyen's orthography. The sources are as follows:

1. B, 2-4. C, 5-6. B, 7. Rotuman solo, Sa'a tolo, 8. B, 9. C (one(one)), but with initial *q based on Tongan ʔoneʔone, etc., 10. MA, 11-13. B, 14. C (kam(i)u), 15-18.B, 19. C, 20. PAN bunuq and Sa'a hunu 'slaughter, butcher', etc., 21. MB, 22. B, 23. PAN (t)avu/mataq, Fijian tamata, Tongan taŋata, etc., 24. MB, 25. B, 26. MA, 27. MB, 28. B, 29. PAN binay, Samoan mafine, etc., 30. C (pati), 31. B, 32. MA, 33-34. MB, 35-36. B, 37. C, 38. B, 39. Tongan matolu, Rotuman mafolu, etc., 40. MA, 41-42. B, 43. MA, 44-45. C, 46. MA, 47. B, 48. PAN meñak, Samoan momona 'be fat', Nggela mona 'greasy', 49. C, 50. Mota rowo, Sa'a loho, 51. B, 52. C, 53. B, 54. C, 55. PAN panas, Tongan mafana, Rotuman mahmahana, etc., 56. B, 57. PAN puki, Dempwolff cites Fijian matavuki 'a disease of the foot'. If this is

not valid, I am not certain of any Oceanic evidence. 58. PAN puluq, Fijian saŋavulu, Mota saŋavul, Sa'a taŋahulu, etc., 59. C (muri), 60. PAN nusa, Dempwolff cites Sa'a änute 'Florida Island', but we also have, e.g., Roviana nusa 'island'. 61. C (piri), 62. MB, 63. Fijian vitolo, Sa'a hiolo, 64. MB, 65. B, 66. MA, 67-68. C, 69. B, 70. MB, 71. B, 72. C, 73. B, 74. C, 75. B, 76-77. MA, 78-80. B, 81. PAN qau(r), the precise Proto-Oceanic shape is in some doubt, but there seem to be cognates, e.g., Sa'a äu, Mota au, Nggela gau, Tolai kaur, etc., 82. B, 83. C, 84-85. B, 86. C (piri), 87-88. B.

II. Consonants

Proto-Oceanic p

*p becomes f in all languages but Tarpia, where it appears as p. Tarpia p is in fact frequently articulated as a bilabial continuant. The name of the language in other sources is usually written "Tarfia". Numerous examples of these correspondences can be found in the list. Sobei provides some evidence for a separate reflex for *mp (and *ŋp).

We find Sobei p in items (46, 71, 73, 76). Of these only (46) shows cognates in other languages. In this case, Boŋgo agrees in showing p instead of f. However, Tarpia p in this form does not differ from the regular reflex of *p. There does not appear to be any hypothesis of environmental

conditioning that could account for Sobei, Bongo p as regular reflexes of non-prenasalized *p.

However, we also find Sobei, Wakdé b in (56). Since the following vowel in (56) is e in both languages, and since all examples of Sobei p cited above have following a, it seems possible that the distinction between Sobei p and b results from environmental conditioning. Note that Masimasi has f in (56), but that the following vowel is a. There is not sufficient information to attempt any further comment on this Masimasi form.

Proto-Oceanic t

*t appears to have fallen together with *s in Tarpia. The reflexes appear to be: t before Tarpia non-high vowels (a, e, o), s before high vowels, and ? before a consonant or word boundary. For t from *t, cf. (5, 10, 16, 17, 23, 41, 49, 63). For t from *s, cf. (7, 21, 24, 27). For s from *t, cf. (4, 32). For s from *s, cf. (8, 33, 34, 60). For ? from *t, cf. (12, 22, 23, 45, 87). For ? from *s, cf. (33, 62).

One example shows s before o from *s (28). As there is only one example (7) of t as the reflex of *s in that environment, the present interpretation--at least the specification of environments--may seem somewhat doubtful. However, in view of the substantial evidence that the reflexes of *s and *t have fallen together and the evidence that *t becomes t before o (16, 63), it seems best to

retain the interpretation given, and leave (28) as the unexplained exception.

*t appears generally as t in all of the other languages. There are numerous examples in the list. However, there are a few apparent exceptions. Sobei has r in (17, 88) and ? in (39). (88) is the only example of a reflex of *t immediately following Sobei i, and (17, 39) are the only instances immediately preceding a Sobei consonant, the consonant being different in the two cases. It seems at least possible that one or more of these forms are genuinely cognate and that their reflexes may be explainable by some regular rule.

Masimasi shows s in one example (17) (note that the proposed Sobei cognate is also aberrant). I can propose no explanation.

Boŋgo shows n in (88). Note that the proposed Sobei cognate is also aberrant. If this form is indeed cognate, I can propose no explanation except the possibility that n represents the word-final reflex of *nt. However, this would constitute the only evidence that any of these languages reflect *t and *nt differently.

Proto-Oceanic s

*s falls together with *t in Tarpia, as noted above. The reflexes of *s in that language have been discussed in the discussion of *t. Otherwise, *s appears as h in Wakdé and as s in the remaining languages. There are numerous

examples in the list, and exceptions are few. One unexplained exception is the loss of *s in initial position in one Wakdé form (33). In the case of (34) the proposed Sobei cognate is presumably morphemically complex. It should be explained that that Sobei form is included on the assumption that the sequence -sa- (not the sequence, dei-) represents a morpheme cognate with the reconstructed root.

Proto-Oceanic R, l, d (and r)

*R, *l, *d, (and *r?) appear to have fallen together in all Sarmi languages, although the conditioning is somewhat complex.

In Sobei, the reflex appears to be d before vowels other than a. Examples are: (1) from *l, (a) before i (5, 11, 38), (b) before o (7, 18); (2) from *R, (a) before i (72), (b) before o (26, 46); (3) from *d, before u (15).

The reflex appears to be r before Sobei a. Examples are: (1) from *R (43); (2) from *d (6, 13, 75). We also find r before t in the one example (45) of a reflex before a consonant. One exception to the above rule shows d before a in (77). However, (77) is one of only two cases in which the reflex appears as the second member of a consonant cluster--the other is (75). (77) differs from (75) in that the cluster is medial rather than initial, and that the preceding consonant is voiced and nasal.

Two further apparent exceptions show the loss of *l (16) and *R (25) before Sobei u (where d would have been predicted). However, (16, 25) represent the only instances of the specific environment /o_u. Thus the loss may be conditioned by that specific environment (or a more generalized environment, say, between rounded vowels). Wakdé and Anus show parallel developments in (16, 25).

The final reflexes are not clear. We find r from *l (84), from *d (59), and from *r (?)(47); but t from *l (58) and from *d(r) (61). Although t is preceded by high vowels in both cases and r by a in two cases, we find r preceded by i in (84). In any event the examples do not suggest that the different reflexes are due to any preservation of original consonant distinctions.

One additional case of an apparent exception should be mentioned. (43) shows apparent loss of the second instance of *R. However, in most examples, CVCVCV forms that were either inherited or developed through partial reduplication lose the second vowel in Sobei. Normally a consonant cluster results. However, the loss of the second vowel in (43) should have resulted in a cluster of two identical consonants. Since I have not noticed any geminate clusters in Sobei, it seems possible that they are regularly reduced, and that the r in (43) actually reflects both instances of *R.

In Wakdé and Masimasi the reflex seems uniformly to be r. Examples are (5, 6, 7, 11, 13, 15, 18, 26, 38, 58). However, as mentioned above (16, 25) show loss in Wakdé. However, we may again tentatively assume that loss occurs just between rounded vowels. No Masimasi cognate of (25) was recorded, but (16) shows an aberrant development. Although the r is retained in this form, it appears to metathesize with the following u. It is possible that that is the regular Masimasi development in the specific environment.

Anus, Boŋgo, and Tarpia show d from *d in (6, 13). The following vowels are Anus e in (13), and a in the remaining forms. There is no other example of a reflex before Anus e or a. For Boŋgo and Tarpia there is one further example of a reflex (in this case, of *R) before a. In the latter case (43), the reflex in both languages is r. This might suggest different reflexes for *d and *R. However, the first two cases (i.e., 6, 13) are in initial position, while (43) involves medial position. The medial reflexes of *d appear to be r (cf. 15, 59, 61, 82, 86). However, there is only one other example of a reflex of any of these consonants in initial position, and that is Tarpia r (38) from *l. In this form the following vowel is i. In other positions the reflex of all is generally r (cf. 5, 7, 11, 16, 18, 26, 38, 45, 46, 47, 50, 63, 81).

I tentatively propose the hypothesis that these consonants have indeed fallen together, and that the reflex is

d initially before a (or Anus e from an earlier a) at least, and at least not before i in Tarpia. Elsewhere it is r.

However, a few problems remain. Anus, like Sobei and Wakdé, shows a zero reflex in (16, 25). Again, we can explain this as conditioned by the environment between rounded vowels if we can assume that the initial o of (15), which is not part of the inherited root, was added at a time subsequent to that in which the environment in question had its effect.

Further, we find Boŋgo final i from *R in (43, 46), and in (63) my notes show i where there was a second person subject, but r elsewhere (this is from *l). Since no other verbs showed this pattern, I cannot comment further except to suggest that final r in Boŋgo sometimes shifts to i under some--probably not phonological--conditions.

One further problem involves Boŋgo d from *l in (39). It represents the second member of a consonant cluster, but we find r as the second member of clusters in (11, 18, 45, 86). (39) differs from the first three of these in that it is a medial cluster which is involved. However, (86) must also be considered as involving a medial cluster since the root would be preceded by a pronominal prefix. Moreover, the following vowel is i in both cases. The only difference which it is possible to seize upon as a potential conditioning factor is the first consonant of the cluster, viz., t in (39).

Proto-Oceanic k

*k is consistently reflected as k in Anus, Boŋgo, and Tarpia. There are numerous examples in the list.

In Sobei, it appears that *k is reflected as k before high vowels (22, 35, 37), otherwise as ʔ medially (47, 85), but in all other environments it is apparently lost (11, 14, 28, 31, 45).

*k disappears in all Wakdé and Masimasi examples in the list (11, 14, 22, 28, 31, 42, 57). However, in both languages the first person singular possessive suffix appears as k. The explanation is not clear. The suffix is most often reconstructed as *ŋku. This suggests that Wakdé, Masimasi k may reflect only the prenasalized consonant, while *k without prenasalization is lost. However, I have no further evidence of a separate reflex for *ŋk.

A second hypothesis would be that *k is retained in final position, but lost elsewhere. This hypothesis would require us to assume that the *k of (28, 42) was lost prior to the loss of the following vowel, but that the loss of the final vowel of *ŋku occurred earlier (i.e., before intervocalic *k was lost). The question cannot be resolved at present.

With respect to lost consonants it should be pointed out that in most of the languages y sometimes develops before initial a--including a which has become initial through loss of a preceding consonant--and that initial w sometimes develops when an initial consonant that was

followed by a Proto-Oceanic rounded vowel has been lost. Cf. (14, 19, 41) for y, and (9, 11, 22) for w.

Proto-Oceanic m

*m is reflected as m in all of the languages (numerous examples).

Proto-Oceanic n

*n is reflected as n in all languages (numerous examples).

Proto-Oceanic ŋ

*ŋ appears to have fallen together with *n (as n) in all (4, 5, 58, 71, 73, 82). However, *ŋ appears not to be reflected in Sobei, Wakdé, and Masimasi (5). I can only speculate that, as was suggested for *R in Sobei (43) above, the second vowel of the trisyllable was lost, and that a non-permissible internal cluster resulted. However, a similar cluster, although presumably across a morpheme boundary, does occur in Sobei (17).

Proto-Oceanic q

*q disappears in all languages (9, 25, 27, 41, 53, 56, 74). As was noted above, of course, w or y sometimes develops before a vowel which comes to stand in initial position as a result of the loss of a preceding consonant.

Proto-Oceanic w

*w appears to be reflected as w, at least in initial position, in all languages (26, 42, 51, 85).

III. Canonical Forms

Before dealing with the vowel reflexes it is useful to consider the canonical forms of inherited morphemes, particularly since vowels are regularly lost in some environments. Except for such regularly recurring morphemes as subject pronominal prefixes to verbs and possessive pronominal suffixes to nouns, I will generally disregard those cases where the form recorded appears to contain morphemic material which presumably does not belong to the proto-morpheme in question. This omission of forms which appear to involve compounding or unknown affixes seems necessary. In the first place it is impossible to know the earlier canonical shape of the unidentified elements. In the second place polymorphemic forms will usually be of more than two syllables, and the data available to me permit only rather tentative suggestions about the development of trisyllables, while almost nothing can be said about longer forms.

Inherited Forms of the Shape (C)VCV

Of the forms that qualify for consideration here, no verbs except for Boŋgo (86) and the quite doubtful case of Boŋgo (35) retain the final vowel of the proto-form in any of the languages.

With three exceptions, proto-forms of this shape, other than verbs, never lose the final vowel in Sobei, Wakdé, and Masimasi. The exceptions might, with more

information, prove to be regular. Most of the non-verbs are nouns. However, two of the exceptions are not nouns. (14) and (38) are, respectively, a pronoun and a numeral. It seems possible that some reformulation of the distinction, stated here as holding between verbs and non-verbs, would accommodate these cases. The remaining exception is Masimasi (42). This form involves an inherited medial consonant that is regularly lost in Masimasi. It seems reasonable to suppose that the single vowel which was recorded for this form reflects a sequence of two vowels that resulted from the loss of the intervening consonant. If that is the case, the loss of the final vowel would involve the development of a CVV, rather than a CVCV shape.

In Anus, Boŋgo, and Tarpia these non-verbs fall into two classes of approximately equal size. One class loses the final vowel (2, 7, 9, 12, 13, 14, 19, 22, 26a, 33, 38, 40, 44, 46, 65, 78, 79). The other (8, 10, 11, 17, 18, 24, 26b, 35b, 37, 42, 48, 49, 52, 57, 64) does not. Although it is impossible from the available data to give a precise characterization of the basis of the classification, it is striking that the first class does not contain any nouns that were recorded with possessive pronominal suffixes. In fact, almost none of these forms would, on the basis of their meanings, be expected to take such suffixes. On the other hand, a number of forms in the second class were recorded with such suffixes, and several others might

reasonably be expected to be permitted to take them. It seems possible, in fact, that some or all of these forms might actually be marked for possession by a third person singular possessor.

In the limited paradigmatic data that I collected, I tended to neglect the third person singular forms. The reason was, I think, that they appeared uninteresting. Those that I have (for all of the languages) seem to consist of nothing but the root--that is, they lack the suffixes that are present for all other persons and for the plural. However, they do retain the final vowel. Thus, I am unable to suggest any means for distinguishing the form of unpossessed nouns of this class and nouns marked for a third person singular possessor.

There is, in Anus, a particular subclass of the class of forms which lose their final vowel which should be mentioned. The subclass in question consists in those proto-forms which had a as the first vowel and a high (i, u) second vowel, that is, the shapes (C)aCi and (C)aCu. These appear as Anus (C)eiC (2,4, 12, 13, 19, 35). The rule does not apply to (27, 53) which lost their second consonants. Two further exceptions are (79), which is perhaps a doubtful cognate anyway, and (14) where the expected development seems to have occurred except that the final vowel somehow remains. It may be of some significance that both of these problematic forms are pronouns.

Only four of the proto-forms under discussion here have vowels in initial position. In some cases the initial vowel is lost. Only one of these forms (19) belongs to the class which loses its final vowel in Anus, Boŋgo, and Tarpia. (19) is also the only one of the four forms which always retains its initial vowel. (8) loses the initial vowel in all six languages. In (24) the initial vowel is lost, at least in Boŋgo and Tarpia, and perhaps in Anus which has an unidentified prefix. The fourth case (37) is most unclear. The initial vowel is clearly lost in Tarpia. Anus and Boŋgo both show something in the position of the initial vowel, but in each case the particular development from *i is difficult to explain. If we were to regard the first vowel in these two forms as belonging to separate morphemes, we would be obliged also to question the Sobei form. One is tempted to suggest that perhaps, in forms which regularly retain the second vowel, initial *i is lost in all of the languages while initial *a is lost just in Anus, Boŋgo, and Tarpia.

Inherited Forms of the Shape CVV

Included here also are forms whose Proto-Oceanic reconstruction has the shape CVCV where, in one or more languages, the second consonant has been lost. The vowel sequence of the CVV forms is usually reduced when the form has been lengthened by reduplication or added morphemes. Otherwise, where the second vowel of the sequence is a

phonetically higher vowel than the first, the sequences prove quite stable (3, 6, 16, 27, 31, 51, 53). However, sequences where the second vowel is not higher are instable, except perhaps in Boŋgo. In these cases they appear reduced (Wakdé, Masimasi (15)), or may break into two syllables with a semivowel inserted between the two vowels (Anus, Tarpia (1, 21), Sobei (76)).

Breaking

In addition to the cases just mentioned there are a number of other cases of phenomena which may tentatively be grouped together under the heading of "breaking". All of them show the development of sequences involving a semivowel or a high vowel and at least one other vowel. One such phenomenon which has already been mentioned is the development of w before an initial vowel in (9, 11, 22). For completeness, at least, the development of initial y (14, 19, 41) should also be recalled.

We may include also the development of Boŋgo ua from *u (8) and from *o (52, 63). There are further cases where Boŋgo ua does not correspond to a Proto-Oceanic rounded vowel, but where cognates in Tarpia or Anus do have a rounded vowel, thus raising the possibility that a rounded vowel was present in these forms at some stage in Boŋgo history. The examples are (23, 44, 48), and perhaps (15) might be regarded as providing further evidence. We may also mention

the apparent breaking of *a to Boŋgo ia in (12, 24) and to Tarpia aya in the cognate forms in that language.

The examples suggest that Boŋgo ua normally corresponds to a rounded vowel in Tarpia, but that when that would result in a Tarpia monosyllable of the shape CV, Tarpia shows breaking to VwV. An analogous rule would account for the breaking to Tarpia aya in (24), but (12) would require some sort of modification of the rule.

We should also cite a scattering of further forms which possibly are relevant to the question of breaking. These include Sobei (59, 68, 75), Wakdé (8), Masimasi (16), and Boŋgo (34, 37, 81). Finally, we should probably recall in this connection a development in Anus that was mentioned above. That is the development of Anus ei from Proto-Oceanic a which stood before a consonant which was followed by a high vowel that was subsequently lost (i.e., /(C) _ Ci,u).

Inherited Forms of the Shape CVCVCV

Included here also are forms whose Proto-Oceanic reconstruction has the shape CVCV where in one or more languages the form has been expanded into a trisyllable, apparently by partial reduplication or, in some cases possibly, prefixation. As in the case of the (C)VCV forms, there seem to be two classes in Anus, Boŋgo, and Tarpia. One class (23, 29, 43, 45, 63) loses the final vowel; the other (5, 39, 54, 55, 80) retains it. Boŋgo (5) is misleading in that the form cited cannot immediately precede

the possessive suffix, but rather is followed by the plural marker -di- which thus alters the canonical shape. When the final vowel is lost, the second vowel is retained. Conversely, when the final vowel is retained, the second vowel is lost--except in two Anus examples (39, 54). It seems at least possible that the second vowel of those forms is epenthetic.

Again as in the case of the (C)VCV forms, Sobei, Wakdé, and Masimasi regularly retain the final vowel (there being no verbs among the examples for these languages). Generally, as in comparable cases in Anus, Boŋgo, and Tarpia, the second vowel is lost (23, 45, 55, 60, 77, and Sobei 29, 39). However, it is retained in two cases in Wakdé (29, 39) unless the a found there is epenthetic.

In two cases (5, 43) we find the shape CVCV. My hypothesis, which was mentioned above, is that the second vowel was lost as expected and that the resulting cluster was subsequently reduced.

One case (56) involves a Proto-Oceanic consonant which is regularly lost. The loss of this consonant, if it occurred prior to the loss of the second vowel, would leave the shape CVCVV. That is what we actually find in Sobei. The Masimasi form is comparable except that for Masimasi I wrote the semivowel w where in Sobei I recorded u. The Wakdé form possibly represents the same development followed by reduction of the vowel sequence.

One final case (25) presents a variety of problems. The second consonant and very possibly the third (cf. discussion of *l, *R above) are regularly lost. The canonical shape has, furthermore, been altered, especially by reduplication, in most of the languages. It seems quite possible that the forms in at least some of the languages are genuine cognates with their current shapes resulting from quite regular rules.

I will not propose an explanation for the retention or insertion of a second vowel in some Wakdé and Anus examples. In view of the limited evidence available it would be possible to suggest a rule specifying either retention or epenthesis in environments defined in terms of the specific phonemes involved. However, I have found no rule that seems particularly attractive.

Loss of High Vowels in Boŋgo

In our consideration of forms of the shape VCV we saw two forms in which the initial vowel was *i. We observed that in one of these cases (8) and possibly the other (37), the initial *i had been lost in Boŋgo. There was no example of initial *u among the VCV forms, but we find that both *i and *u are lost from the first syllable of a number of forms of other canonical shapes (11, 18, 45, 57, 63, 86).

However, we find that the Proto-Oceanic high vowels are retained in cases where the following vowel has been lost (5, 20, 22, 29, 33, 62). This appears to suggest that

the loss of these Proto-Oceanic high vowels in Boŋgo occurred at some time subsequent to the vowel losses (i.e., of some final vowels and some second vowels of trisyllables) discussed previously. One counter-example appears in (86) where the proposed rules should have led to the loss of the second vowel and should, therefore, have blocked the loss of the first. I have no explanation of that form. The fact that it is the only verb showing that kind of vowel loss is probably not significant.

With regard to Boŋgo (86) it would be remiss not to mention Wang 1969. Superficially, at least, this form appears to represent precisely the kind of problem that would be expected as a residue of competing sound changes which intersected in time.

It should be added, moreover, that the loss apparently does not occur in the case of CVV forms (68). As we have seen, the development of forms of this shape seems to be governed by quite different conditions. Thus, it seems that the environment in which the vowel loss occurred must have required a following consonant as well as a vowel subsequent to that.

There are two remaining counter-examples (32, 52). Both of these forms show vowels apparently reflecting *i and in each case the vowel in question is followed by a consonant and a vowel as required. However neither of the actual reflexes is a high vowel. I would tentatively suggest that

these vowels had already been lowered before the time in which the rule in question (which, as we have seen, is probably chronologically recent) operated.

IV. Vowels

Proto-Oceanic e

There are very few examples of *e. These suggest that the regular reflex is perhaps e in all languages. Examples are Sobei, Wakdé, Masimasi (9), Sobei (29), and Wakdé, Anus, Boŋgo, Tarpia (41). However, we find unexplained Sobei o in (70) and Wakdé i in (29).

Proto-Oceanic o

With the possible exception of Wakdé and Masimasi, where the limited amount of evidence leaves some uncertainty, the most common reflex in all languages is o. However, we find a as a second regular reflex in certain environments in Sobei, and presumably Wakdé and Masimasi.

In Sobei, Wakdé, and Masimasi *o appears as a when followed by a consonant plus a vowel (7, 9, 46, 67, 70, 73). All of the examples just given involve the initial syllable, but Wakdé (39)--if the vowel in question is not epenthetic--is evidence that that is not a necessary characteristic of the environment.

Sobei generally shows o in other environments (7, 21, 26, 28, 46, 74). All examples except (21, 25) involve final position, and neither of the latter involves both a following

consonant and a vowel. Of these etyma, Masimasi has o in (7), and Wakdé has o in (7, 28) but u in (21, 26) and perhaps (25). I can offer no explanation of the distribution of o and u reflexes in Wakdé; (7) and (26) are a near minimal pair.

One Sobei exception is (77), which shows a. The fact that this is the only case where a consonant cluster precedes may be significant. An additional exception is (56), where the reflexes appear to be Sobei e, Masimasi i. There is no basis for attempting an explanation.

Anus, Boŋgo, and Tarpia consistently show o in closed monosyllables (7, 28, 46, 50, 65, 67, 70) with the single exception of (9), where all have e. (9) exhibits a kind of breaking which has been mentioned above. Its explanation may lie in that fact.

Aside from the closed monosyllables the only other examples of reflexes of a first syllable *o are (21, 48). (21) involves an originally unstable vowel sequence and subsequent breaking (cf. Canonical Forms). (48), which has Anus o, Boŋgo ə, and Tarpia a, is a generally aberrant form--a fact that raises doubts about the etymology.

(25) can only be mentioned for completeness. It presents unique conditions. There are, likewise, no comparable data for assessing the conditions involved in Anus e in (39), but there is the possibility that it is epenthetic.

In all other cases of *o which was not in the first syllable of the root, the Tarpia reflex is o (26, 52, 63, 83).

However, although Boŋgo has o in (26), it shows (breaking to?) ua in the other two instances (52, 63). An Anus cognate was recorded only for (52), where the reflex is u. I cannot propose an explanation.

Proto-Oceanic u

The most usual reflex in all languages is u. However, there are a number of examples of i, particularly in the western languages. The conditions determining the appearance of i cannot be stated conclusively, but some suggestions are possible.

The reflexes of *u in Sobei, Wakdé, and Masimasi present a number of uncertainties. *u as the first vowel of CVV forms generally appears as u: Sobei, Wakdé, Masimasi (15), Sobei (76), Wakdé (1). However, we find Sobei, Masimasi o in (1).

In closed monosyllables we find Sobei, Wakdé u in (20). However, there are two possible counterexamples in Sobei (47, 59). If the etymologies suggested for the forms are correct, elements have subsequently been attached so that the vowels in question are no longer in the first syllable of the words. This circumstance may have played a role in their subsequent development.

We may now consider the cases where the first syllable reflex of *u is followed by a consonant plus a vowel. Where the following vowel is rounded, the usual reflex is i: Sobei, Wakdé (18), Sobei (33, 72, and the doubtful 88). Wakdé (33)

shows i, but the Proto-Oceanic rounded vowel of the second syllable has now become unrounded. Whether or not this form constitutes a counter-example to the proposed rule depends on the chronological ordering of the changes. However, it is possible that the environment that conditions the reflex i in Wakdé involves a high vowel rather than a rounded vowel in the following syllable.

One counter-example appears to be Sobei (60), which has e. However, the consonant cluster which follows that reflex may be the explanation for it.

Where the following vowel is not rounded, the conditioning factors are obscure. (11), with Sobei, Wakdé a and Masimasi i, may show the effect of breaking. However, according to the rules proposed for *k in Sobei, the Proto-Oceanic u in this form must already have made some shift in order to permit the loss of initial *k in Sobei (thereby freeing the vowel for that type of breaking).

(22) shows Sobei u, but Wakdé i. This appears again to suggest that a following high vowel, rather than a rounded vowel as was proposed for Sobei, might be the factor that conditions Wakdé i. However, an alternative explanation might be based on the breaking in Wakdé.

Sobei (45) and Wakdé (57) are further problematic cases. There are environmental factors in each that cannot be properly evaluated with the data at hand.

The reflexes of *u which was not in the first syllable are again usually i or u.

Where preceded immediately by a vowel, the reflex appears to be u: Sobei, Wakdé, Masimasi (6, 16), Sobei, Wakdé (53), Sobei (and perhaps Wakdé) (25), and perhaps Sobei (68) which involves either a suffix or breaking.

Otherwise, we find i in the following examples: Sobei, Wakdé, Masimasi (2, 12), Sobei, Wakdé (39), Sobei (67) and (13), but with Wakdé, Masimasi u in (13). It may be significant that in all but one case (67) the preceding consonant is an apical. It may also be noted that the preceding vowel is a in all cases except (39) (and the Wakdé form shows preceding a in (39) as well). However, two possibly significant facts concerning Sobei (39) should be mentioned. (39) is the only instance where the reflex in question is preceded by a consonant cluster rather than a single consonant, and the preceding vowel--Sobei e--derives ultimately from *a.

In most of the cases where the Sobei reflex is u, the preceding consonant is not apical. Examples are (37), (44), (58) (also Masimasi), (33) (but with Wakdé i), and (8) (but with Masimasi i, Wakdé iu). However, two examples do show preceding apicals. In one (66), moreover, the preceding vowel is a. In the other case (56), Wakdé shows o which may represent the fusion of two vowels (*uo), while Masimasi shows w. The preceding vowel is Sobei, Wakdé e, Masimasi a, from *i.

There are two aberrant reflexes, in both cases preceded by an apical consonant. In (22), Sobei shows e (but Wakdé i). In (18), Sobei shows o and Wakdé u. It may be significant that the preceding vowel is a high vowel in both cases.

It is apparent that the available data do not make it possible to formulate rules to account for all of these reflexes. However, there does seem to be sufficient patterning to suggest that, if we could obtain more accurate knowledge of the order in which the changes have occurred, and therefore of the environments that existed at various stages in the history of the languages, many of the present reflexes might prove to be precisely predictable.

In Anus, Boŋgo, and Tarpia, *u generally appears as u. Examples are (1, 6, 8, 11, 15, 16, 18, 20, 22, 25, 33, 37, 45, 53, 58, 59, 68, and 88?). In Anus we find exceptions. Anus i appears in (18). Note that this reflex is followed by a consonant plus a rounded vowel--an environment that seems to condition the occurrence of i in Sobei, and possibly other western languages. In (11) we find Anus e. It may be of significance that the reflexes of the cognates in the western languages were also unexplained. There are only two cases where the word-final reflex is not u. These turn out to be the only cases where the preceding segment is an apical consonant. This is reminiscent of the tendency, noted above, for *u to be reflected as i in the western languages when preceded by a vowel followed by an apical consonant.

In (39) the Anus reflex is i as in Sobei and Wakdé. In (18) it is o as again in Sobei. No explanation for the reflexes in (18) is apparent.

There are several Boŋgo exceptions. (8, 81) do not present any problem except for what appears to be breaking of different kinds. (39) shows final i after an apical. (47, 66) represent more or less questionable etymologies, and each, if cognate, is complicated by combination with other morphemes.

There are two exceptions in Tarpia. (47) as in Boŋgo and Sobei must be regarded as representing a doubtful etymology. (57) shows the reflex i. With respect to the latter, it may be significant that proto-forms which had high vowels, like or unlike, in two successive syllables regularly show like high vowels (usually u-u) in Tarpia (cf. 11, 18, 45, 59).

Proto-Oceanic i

The most usual reflex in all languages is i. However, there are sporadic instances of other reflexes. The possibility that the reflexes of *i and *u have fallen together in certain restricted environments is noted.

In Sobei, Wakdé and Masimasi the reflex is generally not i when followed by a consonant plus a vowel. The only counter-examples are Masimasi (38) and Sobei (37). In the latter case there is some doubt that the vowel in question actually derives from the reconstructed morpheme (cf. the cognates in other languages).

There are not enough examples to be specific about regular reflexes in this environment. We find Sobei, Wakdé e and Masimasi a in (56), and Sobei, Wakdé a in (32). Wakdé has a in (29), but there is the possibility that it is epenthetic.

In morpheme-final position we find i immediately after a vowel (31) (and Wakdé 34?). Following a consonant we have i in three cases (11, 32, 73) and u in one (19). As it happens, all of the three cases where the reflex is i show a preceding apical consonant, while (19) does not. This parallels the rule suggested for i and u reflexes of *u in these languages, and suggests that in the western languages, as perhaps also in Tarpia, the reflexes of *i and *u fall together in certain restricted environments.

Sobei (88) provides one further possible counter-example in final position. However, the etymology is quite doubtful.

All environments not so far covered consistently show i. The only examples are from Sobei: in closed monosyllables (38, 61, 84); followed by a vowel (68).

In Anus the reflex is consistently i. The only counter-example is the doubtful initial syllable of (37).

In Boŋgo and Tarpia the reflex is generally not i when followed by a consonant plus a vowel. Boŋgo (32, 52) have ə. (37) has wu, but, as has been suggested before, this may reflect a separate element. Tarpia (52) has ə, while

(63) has o, and (32) has i. (32) has i in the following syllable; this may be the factor responsible for raising the first vowel (or for preventing its being lowered).

In final position i is the usual reflex (32, 35b, 57, 64, 86, 3, 27, 31, 51). However, (11) shows u in both languages. This may be connected with the tendency, noted for Tarpia, for high vowels of adjacent syllables of the same morpheme to become alike.

The same phenomenon may be involved in (45) in both languages. Generally the reflex in closed syllables is i (29, 38, 61, 62). Boŋgo (5), with e, represents an exception, but this reflex may be due to the following consonant cluster produced by the addition of the plural suffix -di.

The only example of *i immediately before a vowel is Boŋgo (68), where the reflex is i.

Proto-Oceanic a

The most common reflex in all languages is a. However, there are frequent instances of other reflexes. A number of hypotheses regarding environmental conditioning are proposed. In addition to several environments which appear to condition a in all languages, suggestions are made as to environments producing the following reflexes: Sobei e, Masimasi e, o, Anus ei, o, e, and e or ə, and Boŋgo e and e or ə.

Sobei, Wakdé, and Masimasi generally show a in CVC forms. The one exception, Sobei (35) has no apparent explanation.

As the first member of a vowel sequence we find Sobei, Wakdé a (6, 30, 31, 53), but in Masimasi there is partial assimilation to the following vowel. In Masimasi, we find e before i (31) and o before u (6).

Before a consonant followed by a vowel we generally find a (2, 12, 13, 17, 19, 24, 26, 40, 41, 44, 54, 58, 66, 69, 71, 74), and Wakdé, Masimasi (10), Wakdé (25, 29, 39). However, Sobei has e in (10, 25, 43). Sobei e is the regular reflex before a consonant cluster (see below). Thus, the reflex in (43) provides additional support for the hypothesis that the medial consonant in that form represents a reduced cluster.

Sobei, Wakdé, and Masimasi show i in (5), which also involves a possible reduced cluster. Other unexplained exceptions are Sobei (85) and Wakdé (23).

Before a consonant cluster, Wakdé has a in the single example (23). There are no Masimasi examples. In the same environment, Sobei has e (23, 29, 39, 55, 77), but a in (45). There are two environmental factors in the case of (45) that might be significant. It is the only word-initial example (that is, without a preceding consonant), and it is the only case where the following consonant is an apical (viz., r).

In final position a variety of reflexes appear with no discernable pattern. The most frequent are a and o. With a we find Sobei, Wakdé, Masimasi (10), Sobei, Wakdé (24), Wakdé, Masimasi (17), Sobei (43, 55, 71), Masimasi (5, 38). With o we find Sobei, Wakdé (54), Sobei, Masimasi (40), and Sobei (23, 60, 69, 72, 85). In addition, there is i (Sobei, Wakdé (5)), e (Sobei 45, 76)), and u (Wakdé (40)).

In the case of Anus, we have already mentioned the rule whereby an original CVCV form whose first vowel was *a and whose second vowel was a high vowel, and which belonged to a class which normally lost the final vowel, assumed the shape CeiC. Examples are (2, 4, 12, 13, 35a, 39). The lone exception is (79), a pronoun. This form seems a bit suspect because of the fact that the comparable pronouns in the other languages cannot be derived from this proto-form, and yet seem suspiciously similar to the Anus form (e.g., Tarpia dim, Boŋgo duom, Masimasi jem, Wakdé idim).

In CVCV forms where the second vowel was not high and where the second vowel was lost, the rules are not clear. The only verb (36) shows a. (26, 40) have o. The o in (26) may be due to what seems to be a rule changing a to o after an initial w (26, 42, 51). The different reflexes in (36) and (40) are not so easily explained. There are some reasons to speculate that the loss of final vowels in verbs and some nouns may have occurred independently. If that were the case, it would constitute no more than a possible clue

as to the direction in which the explanation might be sought. On the other hand, the parallel environments of (40) and (23), which shows the reflex o in a non-initial closed syllable is suggestive. (23) is also unexplained, and it may be mentioned that both (40) and (23) present problems in other languages.

Before a consonant plus a vowel, when the latter was a, the reflex is generally e or ə. I find no way to account for the distinction between what I have written e and what I have written ə in either Anus or Boŋgo. I wonder if they do not represent the same phoneme. Examples of ə as a reflex of *a in this environment are (49, 58). Examples of e are (10, 24, 54, 55). We also find e in (5, 17, 39). In each of these cases the following vowel is e. However, in (5, 17) this e presumably comes from original *a (I will suggest below that it may be a recent development). Note, however, that *a seems to be reflected as e before a consonant cluster (5, 55). Note further that the same reflex appears in two cases where we would have expected a cluster, but where that cluster is interrupted by a vowel (39, 54). The possibility has been mentioned that these vowels which interrupt the expected cluster are recently introduced epenthetic vowels.

Before a consonant followed by a vowel other than a, the reflex is generally a (41, 54, 58, 64). However, (23, 29) are unexplained exceptions.

In final position, the normal reflex is a (10, 24, 49, 55). However, we find o in (42, 48, 54). I would suggest that the first two are due to a recent rule that changed a to o where the preceding vowel was o. (54) remains a problem, and in view of the obscurity in which the history of its preceding vowel reposes, is likely to continue to do so for the time. We also find e in two cases (5, 17). I suggest that, as in the case of the final o, these represent a recent assimilation to the preceding vowel under some unspecifiable conditions.

In Boŋgo, *a when immediately followed by a vowel generally appears as a (6, 27, 30, 51). In final closed syllables we find a (2, 13, 14, 19, 26a, 36, 43, 69) except where (unexplained) breaking occurs (12, 23, 44).

Before a consonant cluster the reflex is e (39, 55, 80). Before a single consonant plus a vowel, we generally find e or ə (which possibly represent the same phoneme) where the following vowel is a (10, 17, 35a, 43, 49). An exception is (42) where we find u (possibly significantly) between w and k. Where the following vowel is not a, the reflex is usually a (26b, 41, 64, 66). However, there are exceptions. (23, 29) are unusual in that the following vowel is in a closed syllable (if the sequence ua can be regarded as falling into a single syllable). (4,5) both involve considerations (including added morphemes) that are difficult to assess.

Where final *a has been preserved it generally appears as a (10, 17, 24b, 42, 49, 21, 55, 80), except in cases of breaking (24a, 48).

In Tarpia *a generally is reflected as a. I have not discovered any conspicuous gaps in the set of environments in which this reflex occurs. Nevertheless there are a number of exceptions. In (12, 24) we find the breaking to aya which has been mentioned previously. In addition there are several cases where *a appears as i or u. Examples of the i reflex are (4, 5, and perhaps 34, 25). The first three of these involve *i in the environment in such a way that one wonders if some kind of metathesis may have played a role. The same question arises with regard to some cases of u (e.g., 44, 60, and possibly 48). No such explanation is available for the remaining cases of u (23, 29). It must be significant that the items that are problematic in Tarpia are usually problematic in suggestively similar ways in Boŋgo and Anus.

Items showing at least one example of Tarpia a for *a are (1, 2, 3, 5, 6, 10, 13, 14, 19, 21, 23, 26, 27, 30, 31, 35, 36, 41, 42, 43, 49, 51, 83).

V. Conclusions

Nothing in the results presented here appears to give any occasion to doubt that these languages do belong to the Oceanic subgroup of Austronesian. Although, there were, not

surprisingly, a number of cases where it was impossible to account for the particular reflex of a particular Proto-Oceanic phoneme in a particular form, I am not aware of any cases where the explanation would benefit from recourse to Proto-Austronesian reconstructions rather than Proto-Oceanic. On the other hand, all of the array of phonological developments that characterize Proto-Oceanic as distinct from Proto-Austronesian appear to be reflected.

I once suggested (Grace 1955:338) that the Oceanic subgroup (there called "Eastern Malayo-Polynesian") extends no farther west than approximately the western border of Australian New Guinea. The present study, therefore, gives notice that that earlier statement requires amendment.

One feature of this analysis that might be of significance is the paucity of evidence for a distinction between prenasalized and non-prenasalized consonants. Of course, such paucity of evidence can hardly be regarded as conclusive in view of the small number of cognates available at all. Moreover, a separate reflex in some languages for one prenasalized consonant, *mp, seemed fairly likely. However, it does seem possible that the development of prenasalization in these languages has been different from that in some other parts of Oceania--particularly parts of eastern Melanesia--and presumably from Indonesia as well. Whether further information on these languages or other languages of the area might throw some light on this so far most mysterious phenomenon it is impossible to guess.

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The number of individual segments that could not be fully explained is, of course, fairly large. However, I do not think that is at all surprising. The number of available cognates was small. Moreover, there seem to have been considerably more conditioned changes than has been the case (or than have been identified and reported) in many Oceanic languages. The vowels in particular do not show the remarkable stability that we find in some languages of eastern Oceania. Various indications in the course of the study suggest to me that many of the doubtful phenomena would become clear if we had more information that would permit us to reconstruct the sequential order of the various changes.

Finally, the only fitting conclusion must be the expression of the hope that these languages will some day receive the more serious field study that they deserve.

VI. Cognate List

	Proto-Oceanic	Sobei	Wakdé	Masimasi	Anus	Boŋgo	Tarpia	
1.	pua(q)	afo	afu	afo	fowo	fukwa	pawa	fruit/seed
2.	manu(k)	maninetio	mani	mani	mein	man	man	bird
3.	mai	ama	-ma	-ma-	-ma, -me	-mai-, -mi-	-mai	come
4.	taŋi(s)	-tan	-tan	-tan	-tein	tənian	-nsin	cry
5.	taliŋa	tidi-	tiri-	tira-	terne-	tərən-	tarni-	ear
6.	(n)dau(n)	rau	rau	rou	dau	dau	dau	leaf
7.	solo	sado	haro	saro	sor	sor	tor	mountain
8.	isu(ŋ)	su-	hiu-	si-	su-	sua-	siwi-	nose
9.	qone	wane	wane	wane	wen	wen	wen	sand
10.	(ŋ)mata	(meta (-meta)	-mata -mata	-mata-	meta	mətə	mata	sharp tooth
11.	kuli(t)	wadi	wari	wiri	keri	kru	kuru	skin
12.	patu	fati	fati	fati	feit	fiat	paya?	stone
13.	(n)danu(m)	rani	ranu	ranu	dein	dan	dan	water
14.	kamu	yam-	yam	yam	keimu	kam	kam	ye
15.	dua	daidu	ru	ru	oru	erkuat	arko	two
16.	tolu	tou	tou	tour	tou	tor	tor	three

	PO	Sobei	Wakdé	Masimasi	Anus	Boŋgo	Tarpia	
17.	mata	somarnam 'eye'	mata- ro 'face'	masa malna- 'eye'	mete- keiño 'eye'	meta- kedia 'eyebrow' məta- dani 'tear'		
18.	pulu	fido	firu		firo	fru	puru	feather
19.	api	yafu	yafu		yeif	af	yap	fire
20.	punu(q)	(-fun			-fun			hit
		(	-fun		-fun	-fun	-pun	kill
21.	soa	eson	ahun		sawe	sua	tawa	husband
22.	kutu	kute	witi		kut	kut	ku?	louse
23.	ta(ŋ)mata	temto	tamturi		timot	tumuat	tamu?	man, person
24.	a(n)sa(n)	asa-	aha-		nesa-	si-, sa-	taya	name
25.	paqoRu	fefou	afafu		fofou	fəu	pipiu	new
26.	waRo (a)	(wado	waru		wor	war	war	rope
	(b)	(				werkai waro	sini-waro	vein
27.	saqi(t)	sesi	-haha		-sai	-sai	-tai	sew
28.	(n)soka	(-so	-ho			-sok	-sok	stab
		(			-sok		-sok	shoot (gun)
29.	mapine	mefne	mafani		mofin	mofin	mupin	woman
30.	pa(t)	fau	fau		fau	fau	pau	four
31.	kai	ai	ai	ei	kai		kai	tree

	PO	Sobei	Wakdé	Ma-imasi	Anus	Boŋgo	Tarpia	
32.	tini-	tani-	tani-			təni-	sini-	body
33.	susu	sisu-	ihi-			sus	su (sic) but, su? dani 'milk'	breast
34.	(n)sai	deisana	heiha			siera	sira	who?
35.	kani (a) (b)	((kin (			-kein	-kena	kani	eat meat
36.	pana(q)	-fan			-fan	-fan	-pan	shoot
37.	iku	iku			aku	wuku	ku	tail
38.	lima	dim		rima-	arim		rim	five
39.	matolu	me?di	matari		meteri	metdi		thick
40.	(ŋ)mata	mato	matu	mato	mot			snake
41.	qate	(((	ate		nate-	ate- tatroi	yate- dau liver yate- akarup forget	
42.	waka			wu	woko	wuka	waka	root
43.	paRaRa	fera				fərai	parar	adze
44.	namu(k)	namu				nuam	num	mosquito
45.	kuRita	arte				krut	kuru?	octopus
46.	(m)poRo	pado				poi	por	pig
47.	kuru	ma?ar				baker	baker	thunder

	PO	Sobei	Wakdé	Masimasi	Anus	Boŋgo	Tarpia	
48.	(ŋ)mona(k)				mono	mənua	manu	fat
49.	tama				təma	tema-	tama-	father
50.	Ropo				-rof	-rof	-rop	to fly
51.	wai(R)				woi	wai	wai	river
52.	nipo(n)				nifu-	nəfua-	nəpo-	tooth
53.	paqu	-fau	-fau		-fau			to tie
54.	mapa	mafo	mafo		memafo			heavy
55.	mapana(s)	mefna			mefna	mefna		hot, warm
56.	pituqo	betue	beto	fatwi				star
57.	puki		fiane			fki	piki-	vagina
58.	saŋapulu	snafut		sanafur	sənafu			ten
59.	mudi	bitimuar					murumi	behind
60.	nusa	nenso					ansu	island
61.	pi(dr)i	-fit					-pirnei	twist
62.	pi(n)sa					fisfis	pi?pi?	how much?
63.	pitolo					ftuar, ftuai	potor	hungry
64.	ta(n)si				tasi-	tasi-		yo. brother
65.	toko(n)				(kai) tok	tok		stick

	PO	Sobei	Wakdé	Masimasi	Anus	Bonggo	Tarpia	
66.	natu	natu				teinateia		child
67.	topu	tafi				tof		sugar cane
68.	niu(R)	niue				niu		coconut
69.	(n)sama	samo				sam		outrigger
70.	po(n)se	faso				fos		paddle
71.	paŋa	(kin) pana						eat (food?)
72.	Ru(ŋ)ma(q)	dimo						house
73.	(ŋ)poŋi	pani						night
74.	qato(p)	ato rau						roof
75.	pada(n)	frau						pandanus
76.	(m)pua	puwe						betel nut
77.	malo	memda						bark cloth
78.	ki(n)ta				kit			we, incl.
79.	kami				kim			we, excl.
80.	mamasa					memsa		dry
81.	qau(rR)					awur		bamboo
82.	(n)doŋo						-rnek	to hear
83.	lalo						raroi	in

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	PO	Sobei	Wakdé	Masimasi	Anus	Boŋgo	Tarpia	
84.	pili(q)	-fir						choose
85.	wa(ŋ)ka(ŋ)	wo?o						canoe
86.	pi(dr)i					-fri		braid (rope)
87.	tanu(m)					-tniei	-?nei	bury
88.	pu(n)ti	firo				fun		banana

NOTE

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The materials collected consisted in vocabularies following the TRIPP list. The most complete lists were obtained for Sobei, Boŋgo, and Tarpia. There is somewhat less material for Wakdé and Anus, and only a short list for Masimasi. Although I also have some limited paradigmatic material, it is insufficient in quantity and design to provide any consistent structural picture. All that can

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be said is that the languages do employ possessive pronominal suffixes on nouns and pronominal (subject) prefixes on verbs. There was no opportunity for systematic checking of the lists, and they cannot make any pretense of being systematically phonemic. However, at this remove (the lists are, of course, quite cold now) I do not recall that these languages presented any conspicuous difficulties to the ear. Although it is to be expected that errors in transcription have introduced some problems into the present study, I would not expect that their overall effect is such as seriously to distort the results.

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REFERENCES

Biggs, Bruce. 1965. Direct and indirect inheritance in Rotuman. Lingua 14:383-415.

Cashmore, Christine. 1969. Some Proto-Eastern Oceanic reconstructions with reflexes in Southeast Solomon Islands languages. Oceanic Linguistics 8:1-25.

Chrétien, C. Douglas. 1962. Comment on Arthur Capell, Oceanic Linguistics Today. Current Anthropology 3:396-8.

Cowan, H. K. J. 1949-50. Indonesisch of melanesisch op noord Nieuw-Guinea. Indonesië 3:351-9.

_____. 1952-3. De austronesisch-papoea'se taalgrens in de onderafdeling Hollandia (Nieuw-Guinea). Tijdschrift 'Nieuw-Guinea' 13:133-43, 161-77, 201-6.

_____. 1953. Voorloopige resultaten van een ambtelijk taalonderzoek in Nieuw-Guinea. Den Haag.

Dempwolff, Otto. 1938. Vergleichende Lautlehre des austronesischen Wortschatzes, 3er Band. Austronesisches Wörterverzeichnis. Beihefte zur Zeitschrift für Eingeborenen-Sprachen, 19.

Galis, K. W. 1955-6. Talen en dialecten van Nederlands Nieuw-Guinea. Tijdschrift 'Nieuw-Guinea' 16:109-17, 134-45, 161-77.

Grace, George W. 1955. Subgrouping of Malayo-Polynesian: A report of tentative findings. American Anthropologist 57:337-39.

_____. 1969. A Proto-Oceanic finder list. University of Hawaii Working Papers in Linguistics (Vol. 1), No. 2, pp. 39-84.

Meyer, Adolf Bernhard. 1874. Ueber die Mafoor'sche und einige andere Papua-Sprachen auf Neu-Guinea. Kaiserliche Akademie der Wissenschaften in Wien, Philologisch-Historische Klasse, Sitzungsberichte 77:299-356.

Milke, Wilhelm. 1961. Beiträge zur ozeanischen Linguistik. Zeitschrift für Ethnologie 86:162-82.

_____. 1968. Proto-Oceanic addenda. Oceanic Linguistics 7:147-71.

Wang, William S-Y. 1969. Competing changes as a cause of residue. Language 45:9-25.